Analytical and Quality Control Report

William Little WTS P.O. Box 363 Building 126 3RD Floor WSMR, NM, 88002

Report Date: January 5, 2007

Work Order: 6121107

Project Name:

HELSTF Groundwater Samples

Project Number: 7

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	lime	Date
Sample	Description	Matrix	Taken	Taken	Received
111245	HELSTF-0085-HMW-021-1206	water	2006-12-07	12:45	2006-12-08
111246	HLSF-0085-TB-785-1206	water	2006-12-07	12:45	2006-12-08

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 43 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis,

Dr. Blair Leftwich, Director

Michael abel

Standard Flags

 $\, B \,$ - $\,$ The sample contains less than ten times the concentration found in the method blank.

Work Order: 6121107

HELSTF Groundwater Samples

Analytical Report

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: QC Batch: Ag, Dissolved

32921 Prep Batch: 28533 Analytical Method:

Date Analyzed:

S 6010B 2006-12-18 2006-12-13

Prep Method: Analyzed By:

RR Prepared By: TS

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RL

Sample Preparation:

Parameter Dissolved Silver Flag

Result < 0.00200 Units mg/L

Dilution

RL0.00200

S 3005A

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: QC Batch:

Prep Batch:

Alkalinity

32918 28627

Analytical Method: Date Analyzed:

SM 2320B 2006-12-15 Sample Preparation: 2006-12-15 Prep Method: Analyzed By:

N/A JG Prepared By: JR

RL

Parameter	Flag	Result	Units	Dilution	RL
Hydroxide Alkalinity		<1.00	mg/L as CaCo3	1	1.00
Carbonate Alkalinity		< 1.00	mg/L as CaCo3	l	1.00
Bicarbonate Alkalinity		174	mg/L as CaCo3	1	4.00
Total Alkalinity		174	mg/L as CaCo3	1	4.00

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: QC Batch:

Prep Batch:

Ammonia-N

Ammonia 32703

Analytical Method: Date Analyzed: Sample Preparation: 28457

SM 4500-NH3 B,C

mg/L

2006-12-11

Prep Method: N/A Analyzed By: SM

Prepared By:

SM

RL

1.00

Parameter Flag Result

RL

<1.00

2006-12-11

Units Dilution

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: QC Batch:

Prep Batch:

As, Dissolved 32921 28533

Analytical Method: Date Analyzed:

S 6010B 2006-12-18 2006-12-13 Prep Method: S 3005A

Analyzed By: RR Prepared By: TS

RL

Sample Preparation:

Units Dilution Parameter Flag Result RL0.00500 < 0.00500 Dissolved Arsenic mg/L

Work Order: 6121107 HELSTF Groundwater Samples Page Number: 3 of 43

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Ba, Dissolved QC Batch: 32921 Prep Batch: 28533

7

Analytical Method: S 6010B Date Analyzed: 2006-12-18 Sample Preparation: 2006-12-13 Prep Method: S 3005A Analyzed By: RR Prepared By: TS

RL

ParameterFlagResultUnitsDilutionRLDissolved Barium<0.0100</td>mg/L10.0100

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Bromide (IC)
QC Batch: 33039
Prep Batch: 28716

Analytical Method: E 300.0
Date Analyzed: 2006-12-08
Sample Preparation: 2006-12-08

Prep Method: N/A Analyzed By: JR Prepared By: JR

RL

ParameterFlagResultUnitsDilutionRLBromide<1.00</td>mg/L50.200

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Cd, Dissolved QC Batch: 32921 Prep Batch: 28533

Dissolved Cadmium

Analytical Method: S 6010B
Date Analyzed: 2006-12-18
Sample Preparation: 2006-12-13

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

Parameter Flag I

 RL
 Result
 Units
 Dilution
 RL

 <0.00100</td>
 mg/L
 1
 0.00100

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Conductivity QC Batch: 32699 Prep Batch: 28448

Specific Conductance

Analytical Method: SM 2510B
Date Analyzed: 2006-12-08
Sample Preparation: 2006-12-08

Prep Method: N/A
Analyzed By: DR
Prepared By: JR

Parameter Flag F

 RL
 Result
 Units
 Dilution
 RL

 15000
 μMHOS/cm
 1
 0.00

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Cr, Dissolved QC Batch: 32921 Prep Batch: 28533 Analytical Method: S 6010B
Date Analyzed: 2006-12-18
Sample Preparation: 2006-12-13

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

RL

ParameterFlagResultUnitsDilutionRLDissolved Chromium<0.00500</td>mg/L10.00500

Work Order: 6121107 **HELSTF** Groundwater Samples Page Number: 4 of 43

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: QC Batch:

7

Cu, Dissolved

32921 Prep Batch: 28533 Analytical Method:

Date Analyzed: Sample Preparation: S 6010B 2006-12-18 2006-12-13 Prep Method:

Analyzed By: RR Prepared By: TS

RL

Parameter Dissolved Copper Flag

Result < 0.0125

Units mg/L Dilution 1

RL0.0125

S 3005A

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: QC Batch:

Prep Batch:

Cu, Total 32745 28447

Analytical Method: Date Analyzed:

S 6010B 2006-12-12 2006-12-11 Prep Method: S 3010A

Analyzed By: RR Prepared By: TS

RL

Sample Preparation:

Parameter

Flag

Flag

Result

Units

< 0.00500 Total Copper

mg/L

Dilution RL 0.00500

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: QC Batch: Hg, Dissolved

32864

Analytical Method: Date Analyzed:

S 7470A 2006-12-15 Prep Method: N/A Analyzed By: TS

Prep Batch:

Parameter

Dissolved Mercury

28580

Sample Preparation:

RL

Result < 0.000200 2006-12-14

Units

mg/L

Prepared By:

Dilution

RL 0.000200

TS

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis:

Ion Chromatography

33039

Analytical Method:

E 300.0 2006-12-08 Prep Method: N/A Analyzed By: JR

QC Batch: Prep Batch:

28716

Date Analyzed: Sample Preparation:

2006-12-08

Prepared By:

JR

1.00

Parameter Flag Chloride 2240

RL Result

Dilution

500

500

5

RL 2.00 0.200

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis:

OC Batch:

Prep Batch:

Fluoride

Sulfate

Na, Dissolved 32942

28533

Analytical Method: Date Analyzed:

Sample Preparation:

4.26

6470

S 6010B 2006-12-19 2006-12-13

Units

mg/L

mg/L

mg/L

Prep Method: S 3005A Analyzed By: RR

Prepared By: TS

Work Order: 6121107 **HELSTF** Groundwater Samples Page Number: 5 of 43

Prep Method: S 3010A Analyzed By: RR Prepared By: TS

RL Result 2760	Units	Dilution	
			RL
2700		Dimitor	0.500
	mg/L	, , , , , , , , , , , , , , , , , , ,	0.500
021-1206			
Analytical Method: S	6010B	Prep Method:	S 3010A
Date Analyzed: 2	006-12-14	Analyzed By:	RR
Sample Preparation: 2	006-12-11	Prepared By:	TS
RL			
Result	Units	Dilution	RL
2290	mg/L	1	0.500
001 1007			
Analytical Method: Date Analyzed: Sample Preparation:	E 300.0 2006-12-08 2006-12-08	Prep Metl Analyzed Prepared l	By: JR
Analytical Method: Date Analyzed:	2006-12-08	Analyzed	By: JR
Analytical Method: Date Analyzed: Sample Preparation:	2006-12-08	Analyzed	By: JR
	Analytical Method: S Date Analyzed: 2 Sample Preparation: 2 RL Result	Analytical Method: S 6010B Date Analyzed: 2006-12-14 Sample Preparation: 2006-12-11 RL Result Units	Analytical Method: S 6010B Prep Method: Date Analyzed: 2006-12-14 Analyzed By: Sample Preparation: 2006-12-11 Prepared By: RL Result Units Dilution

Nitrate-N

Sample: 111245 - HELSTF-0085-HMW-021-1206

Parameter	Flag	Result	Units	Dilution	RL
Nitrate-N		63.8	mg/L	50	0.100
	, , , , , , , , , , , , , , , , , , , ,				

Analysis:	P, Total	Analytical Method:	S 6010B
QC Batch:	32745	Date Analyzed:	2006-12-12

RL

Prep Batch: 28447 Sample Preparation: 2006-12-11

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Total Phosphorous		< 0.0500	mg/L	1	0.0500

7

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Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Pb. Dissolved OC Batch: 32921

Prep Batch: 28533

Analytical Method: S 6010B Date Analyzed: 2006-12-18 Sample Preparation: 2006-12-13

S 3005A Prep Method: Analyzed By: RR Prepared By: TS

RL

Result Units Dilution Parameter Flag RLDissolved Lead < 0.00500 mg/L 1 0.00500

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: pН QC Batch: 32902 Prep Batch: 28610 Analytical Method: SM 4500-H+ Date Analyzed: 2006-12-08 Sample Preparation: 2006-12-08

Prep Method: N/A Analyzed By: DR Prepared By: JR

RL

Dilution RL Parameter Flag Result Units 0.00 pH 7.82 s.u.

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Se, Dissolved QC Batch: 32921 Prep Batch: 28533

Analytical Method: S 6010B Date Analyzed: 2006-12-18 Sample Preparation: 2006-12-13

Prep Method: S 3005A Analyzed By: RR Prepared By: TS

Dilution Parameter Flag Result Units RLDissolved Selenium < 0.0100 0.0100 mg/L

RL

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: **TDS** OC Batch: 32873 Prep Batch: 28588

Total Dissolved Solids

Analytical Method: SM 2540C Date Analyzed: 2006-12-13 Sample Preparation: 2006-12-13

Prep Method: N/A Analyzed By: DR Prepared By: JR

Parameter Flag

RLResult Units 14500 mg/L

Dilution RL5.00

S 3010A

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Total 8 Metals Analytical Method: S 6010B OC Batch: 32745 Date Analyzed: 2006-12-12 Sample Preparation: Prep Batch: 28447 2006-12-11 Total 8 Metals Analytical Method: Analysis: S 7470A 32862 QC Batch: Date Analyzed: 2006-12-15 Prep Batch: 28579 Sample Preparation: 2006-12-14

Analyzed By: RR Prepared By: TS Prep Method: N/A Analyzed By: TS Prepared By: TS

Prep Method:

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4					
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Total Silver		< 0.00200	mg/L	j	0.00200
Total Arsenic		< 0.0100	mg/L	1	0.0100
Total Barium		< 0.0100	mg/L	1	0.0100
Total Cadmium		< 0.00100	mg/L	1	0.00100
Total Chromium		< 0.00500	mg/L	1	0.00500
Total Mercury		< 0.000200	mg/L	1	0.000200
Total Lead		< 0.00500	mg/L	1	0.00500
Total Selenium		< 0.0100	mg/L	1	0.0100

Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Volatiles WTS Analytical Method: S 8260B Prep Method: S 3510C QC Batch: 32815 Date Analyzed: 2006-12-12 Analyzed By: JG Prep Batch: 28548 Sample Preparation: 2006-12-12 Prepared By: JG

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Bromochloromethane		<1.00	μg/L	1	1.00
Dichlorodifluoromethane		< 1.00	$\mu \mathrm{g}/\mathrm{L}$	1	1.00
Chloromethane (methyl chloride)		<1.00	μg/L	1	1.00
Vinyl Chloride		<1.00	μ g/L	1	1.00
Bromomethane (methyl bromide)		< 5.00	μ g/L	1	5.00
Chloroethane		<1.00	μ g/L	1	1.00
Trichlorofluoromethane		<1.00	μ g/L	}	1.00
Acetone		<10.0	$\mu \mathrm{g/L}$	1	10.0
Iodomethane (methyl iodide)		< 5.00	μ g/L	1	5.00
Carbon Disulfide		< 1.00	μ g/L	1	1.00
Acrylonitrile		<1.00	$\mu { m g/L}$	1	1.00
2-Butanone (MEK)		< 5.00	μ g/L	1	5.00
4-Methyl-2-pentanone (MIBK)		< 5.00	$\mu \mathrm{g/L}$	1	5.00
2-Hexanone		< 5.00	$\mu \mathrm{g/L}$	1	5.00
trans 1,4-Dichloro-2-butene		<10.0	$\mu \mathrm{g/L}$	1	10.0
1,1-Dichloroethene		<1.00	$\mu { m g}/{ m L}$	1	1.00
Methylene chloride		< 5.00	μ g/L	1	5.00
MTBE		< 1.00	μ g/L	1	1.00
trans-1,2-Dichloroethene		< 1.00	$\mu \mathrm{g/L}$	1	1.00
1,1-Dichloroethane		< 1.00	μ g/L	1	1.00
cis-1,2-Dichloroethene		< 1.00	$\mu { m g/L}$	1	1.00
2,2-Dichloropropane		< 1.00	μ g/L	1	1.00
1,2-Dichloroethane (EDC)		< 1.00	$\mu { m g/L}$	1	1.00
Chloroform		7.37	μ g/L	1	1.00
1,1,1-Trichloroethane		< 1.00	μ g/L	ì	1.00
1,1-Dichloropropene		< 1.00	μ g/L	ì	1.00
Benzene		< 1.00	μ g/L	1	1.00
Carbon Tetrachloride		< 1.00	μ g/L	1	1.00
1,2-Dichloropropane		<1.00	$\mu { m g/L}$	1	1.00
Trichloroethene (TCE)		< 1.00	μg/L	1	1.00
Dibromomethane (methylene bromide)		< 1.00	μ g/L	1	1.00
Bromodichloromethane		<1.00	μ g/L	1	1.00
2-Chloroethyl vinyl ether		< 5.00	μg/L	3	5.00

continued ...

sample 111245 continued ...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
cis-1,3-Dichloropropene		<1.00	μ g/L	l	1.00
trans-1,3-Dichloropropene		<1.00	$\mu \mathrm{g/L}$	1	1.00
Toluene		< 1.00	μ g/L	1	1.00
1,1,2-Trichloroethane		<1.00	μ g/L	1	1.00
1,3-Dichloropropane		<1.00	μ g/ $ m L$	1	1.00
Dibromochloromethane		< 1.00	μ g/L	1	1.00
1,2-Dibromoethane (EDB)		< 1.00	μ g/L	1	1.00
Tetrachloroethene (PCE)		< 1.00	μ g/L	1	1.00
Chlorobenzene		< 1.00	$\mu \mathrm{g}/\mathrm{L}$	1	1.00
1,1,1,2-Tetrachloroethane		<1.00	$\mu { m g/L}$	1	1.00
Ethylbenzene		<1.00	μ g/L	1	1.00
m,p-Xylene		<1.00	$\mu \mathrm{g/L}$	1	1.00
Bromoform		<1.00	μ g/L	1	1.00
Styrene		< 1.00	μ g/L	1	1.00
o-Xylene		< 1.00	$\mu { m g/L}$	1	1.00
1,1,2,2-Tetrachloroethane		<1.00	μ g/L	l	1.00
2-Chlorotoluene		<1.00	μ g/L	1	1.00
1,2,3-Trichloropropane		<1.00	$\mu { m g/L}$	1	1.00
Isopropylbenzene		< 1.00	$\mu { m g/L}$	1	1.00
Bromobenzene		<1.00	$\mu \mathrm{g/L}$	1	1.00
n-Propylbenzene		< 1.00	$\mu { m g/L}$	1	1.00
1,3,5-Trimethylbenzene		< 1.00	μ g/L	1	1.00
tert-Butylbenzene		< 1.00	μ g/L	1	1.00
1,2,4-Trimethylbenzene		< 1.00	μ g/L	1	1.00
1,4-Dichlorobenzene (para)		<1.00	$\mu {f g}/{f L}$	1	1.00
sec-Butylbenzene		< 1.00	μ g/L	l	1.00
1,3-Dichlorobenzene (meta)		<1.00	μ g/L	1	1.00
p-Isopropyltoluene		<1.00	μ g/L	1	1.00
4-Chlorotoluene		< 1.00	μ g/L	1	1.00
1,2-Dichlorobenzene (ortho)		< 1.00	μ g/L	1	1.00
n-Butylbenzene		<1.00	μ g/L	1	1.00
1,2-Dibromo-3-chloropropane		< 5.00	μ g/L	1	5.00
1,2,3-Trichlorobenzene		< 5.00	$\mu \mathrm{g/L}$	1	5.00
1,2,4-Trichlorobenzene		< 5.00	μ g/L	1	5.00
Naphthalene		< 5.00	μ g/L	1	5.00
Hexachlorobutadiene		< 5.00	μ g/L	1	5.00
Isopropyl Alcohol		< 5.00	μ g/L	1	5.00
Tert-butyl Alcohol		< 5.00	μ g/L	1	5.00
1,4-Dioxane		< 5.00	μg/L	1	5.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Dibromofluoromethane		52.6	μg/L	1	50.0	105	82.4 - 115
Toluene-d8		51.4	μ g/L	1	50.0	103	89.7 - 108
4-Bromofluorobenzene (4-BFB)		45.4	$\mu { m g/L}$	1	50.0	91	84.6 - 114

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Sample: 111245 - HELSTF-0085-HMW-021-1206

Analysis: Zn, Dissolved QC Batch: 32921 Prep Batch: 28533

Analytical Method: S 6010B Date Analyzed: 2006-12-18 Sample Preparation: 2006-12-13 Prep Method: S 3005A Analyzed By: RR Prepared By: TS

RL

Parameter Dissolved Zinc

Result < 0.00500

Units mg/L Dilution RL0.00500 1

Sample: 111245 - HELSTF-0085-HMW-021-1206

Flag

Analysis: QC Batch:

Zn, Total 32745 Prep Batch: 28447

Analytical Method: S 6010B Date Analyzed: 2006-12-12 Sample Preparation: 2006-12-11 Prep Method: S 3010A Analyzed By: RR Prepared By: TS

RL

Parameter Total Zinc Flag Result < 0.00500

Units mg/L Dilution RL0.00500

Sample: 111246 - HLSF-0085-TB-785-1206

Analysis: QC Batch:

Volatiles WTS 32815 Prep Batch: 28548

Analytical Method: Date Analyzed:

Sample Preparation:

S 8260B 2006-12-12 2006-12-12 Prep Method: S 3510C Analyzed By: JG Prepared By: JG

RΙ

		KL			
Parameter	Flag	Result	Units	Dilution	RL
Bromochloromethane		<1.00	μg/L	1	1.00
Dichlorodifluoromethane		< 1.00	μ g/L	1	1.00
Chloromethane (methyl chloride)		< 1.00	$\mu { m g/L}$	1	1.00
Vinyl Chloride		<1.00	$\mu { m g/L}$	1	1.00
Bromomethane (methyl bromide)		< 5.00	μg/L	1	5.00
Chloroethane		<1.00	$\mu \mathrm{g/L}$	1	1.00
Trichlorofluoromethane		< 1.00	$\mu \mathrm{g}/\mathrm{L}$	1	1.00
Acetone		< 10.0	μ g/L	i	10.0
lodomethane (methyl iodide)		< 5.00	$\mu { m g/L}$	1	5.00
Carbon Disulfide		< 1.00	μ g/L	1	1.00
Acrylonitrile		< 1.00	$\mu { m g/L}$	1	1.00
2-Butanone (MEK)		< 5.00	$\mu { m g/L}$	1	5.00
4-Methyl-2-pentanone (MIBK)		< 5.00	$\mu \mathrm{g/L}$	l	5.00
2-Hexanone		< 5.00	$\mu { m g/L}$	1	5.00
trans 1,4-Dichloro-2-butene		< 10.0	μ g/L	1	10.0
1,1-Dichloroethene		<1.00	μg/L	1	1.00
Methylene chloride		< 5.00	$\mu { m g/L}$	1	5.00
MTBE		< 1.00	μ g/L	1	1.00
trans-1,2-Dichloroethene		< 1.00	μ g/L	1	1.00
1,1-Dichloroethane		< 1.00	μ g/L	1	1.00
cis-1,2-Dichloroethene		< 1.00	μ g/L	1	1.00
2,2-Dichloropropane		<1.00	μ g/L	1	1.00
1,2-Dichloroethane (EDC)		<1.00	μg/L	1	1.00

continued ...

sample 111246 continued...

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloroform		<1.00	μg/L	1	1.00
1,1,1-Trichloroethane		<1.00	μ g/L	1	1.00
1,1-Dichloropropene		<1.00	μ g/L	1	1.00
Benzene		<1.00	$\mu \mathrm{g/L}$	1	1.00
Carbon Tetrachloride		< 1.00	μ g/L	1	1.00
1,2-Dichloropropane		< 1.00	μ g/L	1	1.00
Trichloroethene (TCE)		< 1.00	μg/L	1	1.00
Dibromomethane (methylene bromide)		< 1.00	$\mu \mathrm{g/L}$	1	1.00
Bromodichloromethane		< 1.00	μg/L	1	1.00
2-Chloroethyl vinyl ether		< 5.00	μ g/L	l	5.00
cis-1,3-Dichloropropene		< 1.00	μ g/L	1	1.00
trans-1,3-Dichloropropene		< 1.00	μ g/L	1	1.00
Toluene		15.4	μ g/L	1	1.00
1,1,2-Trichloroethane		< 1.00	μg/L	1	1.00
1,3-Dichloropropane		< 1.00	μg/L	1	1.00
Dibromochloromethane		<1.00	μg/L	1	1.00
1,2-Dibromoethane (EDB)		<1.00	μg/L	1	1.00
Tetrachloroethene (PCE)		< 1.00	μg/L	1	1.00
Chlorobenzene		<1.00	μg/L	1	1.00
1,1,1,2-Tetrachloroethane		< 1.00	μg/L	1	1.00
Ethylbenzene		< 1.00	μg/L	1	1.00
m,p-Xylene		< 1.00	$\mu { m g/L}$	1	1.00
Bromoform		< 1.00	μg/L	1	1.00
Styrene		< 1.00	μg/L	1	1.00
o-Xylene		< 1.00	μg/L	1	1.00
1,1,2,2-Tetrachloroethane		< 1.00	μg/L	1	1.00
2-Chlorotoluene		< 1.00	μg/L	1	1.00
1,2,3-Trichloropropane		< 1.00	μg/L	1	1.00
Isopropylbenzene		< 1.00	μg/L	1	1.00
Bromobenzene		< 1.00	μg/L	1	1.00
n-Propylbenzene		<1.00	μg/L	1	1.00
1,3,5-Trimethylbenzene		<1.00	μg/L	1	1.00
tert-Butylbenzene		< 1.00	$\mu \mathrm{g/L}$	1	1.00
1,2,4-Trimethylbenzene		<1.00	μg/L	1	1.00
1,4-Dichlorobenzene (para)		<1.00	μg/L	1	1.00
sec-Butylbenzene		< 1.00	μg/L	1	1.00
1,3-Dichlorobenzene (meta)		< 1.00	μg/L	1	1.00
p-lsopropyltoluene		< 1.00	μg/L	1	1.00
4-Chlorotoluene		< 1.00	μg/L	1	1.00
1,2-Dichlorobenzene (ortho)		< 1.00	μg/L	1	1.00
n-Butylbenzene		< 1.00	μg/L	1	1.00
1,2-Dibromo-3-chloropropane		< 5.00	μg/L	ĺ	5.00
1,2,3-Trichlorobenzene		< 5.00	μg/L	1	5.00
1,2,4-Trichlorobenzene		< 5.00	μg/L	•	5.00
Naphthalene		< 5.00	μg/L	1	5.00
Hexachlorobutadiene		< 5.00	μg/L	Î	5.00
Isopropyl Alcohol		< 5.00	μg/L	Î	5.00
Tert-butyl Alcohol		< 5.00	μg/L	í	5.00
1,4-Dioxane		< 5.00	μg/L	1	5.00
		73.00	P-6' P	1	J.00

Method Blank (1)

Prep Batch: 28447

32745

QC Batch:

QC Batch: 32745

Work Order: 6121107 HELSTF Groundwater Samples Page Number: 11 of 43

Analyzed By: RR

TS

Prepared By:

		111.5.5.1.1	Grounds	vater Sampres			,,	
					Spike	Percent		overy
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery		mits
Dibromofluoromethane		52.8	μ g/L	1	50.0	106		- 115
Foluene-d8		51.2	μ g/L	1	50.0	102		- 108
4-Bromofluorobenzene (4-E	SFB)	45.8	μg/L	<u>l</u>	50.0	92	84.6	- 114
Method Blank (1) QC l	Batch: 32699							
QC Batch: 32699		Date Analy:	zed: 20	06-12-08		Anal	yzed By:	DR
Prep Batch: 28448		QC Prepara		006-12-08			ared By:	DR
D	Ti		M. Res	DL 16	Un	ita		RI
Parameter Specific Conductance	Flag			.00	μМНС			
Specific Conductance				.00	μινιτιο	7376111	· · · · · · · · · · · · · · · · · · ·	
Method Blank (1) QC	Batch: 32703							
QC Batch: 32703		Date Analy	zed: 20	006-12-11		Anal	lyzed By:	SM
Prep Batch: 28457		QC Prepara		006-12-11		Prep	ared By:	SM
			М					
Parameter	Flag		Res		Un			R
Ammonia-N			<0.8	20	mg	/L		
Method Blank (1) QC	Batch: 32745							
QC Batch: 32745		Date Analy	zed: 2	006-12-12		Ana	lyzed By:	RR
Prep Batch: 28447		QC Prepara		006-12-11			pared By:	TS
			М	DL				
Parameter	Flag		Res	sult	Unit	ts		RL
Total Copper			< 0.00	127	mg/	L		0.00
Method Blank (1) QC	Batch: 32745							
QC Batch: 32745		Date Analy	zed: 2	006-12-12		Ang	ilyzed By:	RI
Prep Batch: 28447		QC Prepara		006-12-11			pared By:	TS
				MDL				
Parameter	Flag			Result		nits		RI
Total Phosphorous			1).0229	111	g/L		0.0

Date Analyzed:

QC Preparation: 2006-12-11

2006-12-12

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Work Order: 6121107 HELSTF Groundwater Samples

		MDL		
Parameter	Flag	Result	Units	RL
Total Zinc		< 0.000666	mg/L	0.005

Method Blank (1) QC Batch: 32745

QC Batch: 32745 Date Analyzed: 2006-12-12 Analyzed By: RR
Prep Batch: 28447 QC Preparation: 2006-12-11 Prepared By: TS

		MDL		
Parameter	Flag	Result	Units	RL
Total Silver		< 0.000274	mg/L	0.002
Total Arsenic		< 0.00489	mg/L	0.01
Total Barium		< 0.000450	mg/L	0.01
Total Cadmium		< 0.000268	mg/L	0.001
Total Chromium		< 0.00357	mg/L	0.005
Total Lead		< 0.00310	mg/L	0.005
Total Selenium		< 0.00556	mg/L	0.01

Method Blank (1) QC Batch: 32815

QC Batch: 32815 Date Analyzed: 2006-12-12 Analyzed By: JG
Prep Batch: 28548 QC Preparation: 2006-12-12 Prepared By: JG

		MDL		
Parameter	Flag	Result	Units	RL
Bromochloromethane		< 0.0699	μg/L	1
Dichlorodifluoromethane		< 0.0598	μg/L	1
Chloromethane (methyl chloride)		< 0.230	μ g/L	1
Vinyl Chloride		< 0.0902	μ g/L	1
Bromomethane (methyl bromide)		< 0.740	μ g/L	5
Chloroethane		< 0.195	μ g/L	1
Trichlorofluoromethane		< 0.160	μ g/L	1
Acetone		2.47	μ g/L	10
Iodomethane (methyl iodide)		< 0.112	$\mu \mathrm{g/L}$	5
Carbon Disulfide		< 0.0764	$\mu \mathrm{g/L}$	J
Acrylonitrile		< 0.184	μ g/L	1
2-Butanone (MEK)		< 0.394	μ g/L	5
4-Methyl-2-pentanone (MIBK)		< 0.484	μ g/L	5
2-Hexanone		< 0.0975	μ g/L	5
trans 1,4-Dichloro-2-butene		< 0.420	μ g/L	10
1,1-Dichloroethene		< 0.0736	μ g/L	1
Methylene chloride		1,58	μ g/L	5
MTBE		< 0.0504	μ g/L	1
trans-1,2-Dichloroethene		< 0.0598	μ g/L	1
1,1-Dichloroethane		< 0.0299	μ g/L	1
cis-1,2-Dichloroethene		< 0.101	μ g/L	l
2,2-Dichloropropane		< 0.0665	μ g/L	1
1,2-Dichloroethane (EDC)		< 0.0557	$\mu \mathrm{g/L}$	1
Chloroform		< 0.0475	μ g/L	1
1,1,1-Trichloroethane		< 0.0846	$\mu { m g/L}$	i

continued...

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method blank continued . . .

		MDL		
Parameter	Flag	Result	Units	RL
1,1-Dichloropropene		< 0.0423	μg/L	1
Benzene		< 0.0495	$\mu { m g}/{ m L}$	1
Carbon Tetrachloride		< 0.121	μ g/L	1
1,2-Dichloropropane		< 0.0933	μ g/L	1
Trichloroethene (TCE)		< 0.0495	$\mu \mathrm{g}/\mathrm{L}$	1
Dibromomethane (methylene bromide)		< 0.0640	μ g/L	1
Bromodichloromethane		< 0.0651	$\mu \mathrm{g/L}$	1
2-Chloroethyl vinyl ether		< 0.0905	$\mu \mathrm{g}/\mathrm{L}$	5
cis-1,3-Dichloropropene		< 0.0640	μ g/ $ m L$	1
trans-1,3-Dichloropropene		< 0.0504	μ g/L	1
Toluene		0.330	μ g/L	1
1,1,2-Trichloroethane		< 0.106	μ g/L	1
1,3-Dichloropropane		< 0.0625	μg/L	1
Dibromochloromethane		< 0.0791	$\mu \mathrm{g}/\mathrm{L}$	1
1,2-Dibromoethane (EDB)		< 0.0460	μ g/L	1
Tetrachloroethene (PCE)		< 0.0696	μ g/L	1
Chlorobenzene		< 0.0217	μg/L	1
1,1,1,2-Tetrachloroethane		< 0.125	μg/L	1
Ethylbenzene		< 0.0566	μg/L	1
m,p-Xylene		< 0.0363	μ g/L	1
Bromoform		< 0.0859	μg/L	1
Styrene		< 0.0394	μ g/L	1
o-Xylene		< 0.0505	μ g/L	l
1,1,2,2-Tetrachloroethane		< 0.0672	μ g/L	1
2-Chlorotoluene		< 0.0283	μ g/L	1
1,2,3-Trichloropropane		< 0.0679	μg/L	1
Isopropylbenzene		< 0.0406	μg/L	1
Bromobenzene		< 0.103	μ g/L	1
n-Propylbenzene		< 0.0423	μ g/L	1
1,3,5-Trimethylbenzene		< 0.0557	$\mu { m g}/{ m L}$	1
tert-Butylbenzene		< 0.0770	μ g/L	1
1,2,4-Trimethylbenzene		< 0.0336	$\mu { m g/L}$	1
1,4-Dichlorobenzene (para)		< 0.0672	μ g/L	1
sec-Butylbenzene		< 0.0439	$\mu \mathrm{g/L}$	1
1,3-Dichlorobenzene (meta)		< 0.0672	$\mu \mathrm{g}/\mathrm{L}$	1
p-Isopropyltoluene		< 0.0513	$\mu { m g/L}$	1
4-Chlorotoluene		< 0.0460	μg/L	1
1,2-Dichlorobenzene (ortho)		< 0.0629	μ g/L	1
n-Butylbenzene		< 0.0400	μ g/L	1
1,2-Dibromo-3-chloropropane		< 0.538	μ g/L	5
1,2,3-Trichlorobenzene		< 0.504	$\mu \mathrm{g}/\mathrm{L}$	5
1,2,4-Trichlorobenzene		< 0.166	µg/L	5
Naphthalene		0.740	μg/L	5
Hexachlorobutadiene		< 0.176	μg/L	5
Isopropyl Alcohol		< 5.00	μg/L	5
Tert-butyl Alcohol		< 5.00	μg/L	5
1,4-Dioxane		< 5.00	μg/L	5

Analyzed By: JG Prepared By: JG

Work Order: 6121107 **HELSTF** Groundwater Samples

Report	Date:	Januar
7		

QC Batch:

Prep Batch: 28627

32918

Surrogate	Flag	Result Unit	s Dilution	Spike Amount	Percent Recovery		overy nits
Dibromofluoromethan		43.9 μg/I	. i	50.0	88		- 115
Toluene-d8		μ g/I		50.0	100		- 108
4-Bromofluorobenzen	e (4-BFB)	47.0 μg/I	1	50.0	94	84.6	- 114
Method Blank (1)	QC Batch: 32825						
QC Batch: 32825		Date Analyzed:	2006-12-14		Analyz	ed By:	RR
Prep Batch: 28447		QC Preparation:			Prepare		TS
			MDL				
Parameter	Flag		Result	Units			RL
Total Sodium			(0.0309	mg/L			0.5
Method Blank (1)	QC Batch: 32862						
QC Batch: 32862		Date Analyzed:	2006-12-15		Analyz	ed By:	TS
Prep Batch: 28579		QC Preparation:			Prepar		TS
D	roi		MDL	71 %			Y5. Y
Parameter Total Mercury	Flag	-0.C	Result 0000217	Units mg/L			RL .0002
			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1115, 22			10002
Method Blank (1)	QC Batch: 32864						
QC Batch: 32864		Date Analyzed:	2006-12-15		Analyz	ed By:	TS
Prep Batch: 28580		QC Preparation:	2006-12-15		Prepar		TS
Parameter	Flor		MDL	Units			n r
Dissolved Mercury	Flag		Result 0.0000329	mg/L		Λ	RL .0002
Dissolved Mercury			0.0000327	mg/L			
Method Blank (1)	QC Batch: 32873						
QC Batch: 32873		Date Analyzed:	2006-12-13		Analyz	ed By:	DR
Prep Batch: 28588		QC Preparation:	2006-12-13		Prepare		DR
Davagaatay	ro1		MDL	Y	4		¥5 T
Parameter	Flag		Result <5.00	Uni mg/			RL 5
Total Dissolved Solids			₹3.00	1112/	' L'		,

Date Analyzed:

QC Preparation: 2006-12-15

2006-12-15

HELSTF Groundwater Samples

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Parameter	Flag		MDL .esult	Units		RL
Hydroxide Alkalinity		<	(1.00	mg/L as CaCo3 mg/L as CaCo3		1
Carbonate Alkalinity			<1.00			1
Bicarbonate Alkalinity	<i>!</i>		(4.00 (2.38	mg/L as CaCo3 mg/L as CaCo3		4 4
Total Alkalinity			.2.36	ingri as Cacos		*
Method Blank (1)	QC Batch: 32921					
QC Batch: 32921		Date Analyzed:	2006-12-18		Analyzed By:	RR
Prep Batch: 28533		QC Preparation:	2006-12-13		Prepared By:	TS
			MDL			
Parameter	Flag		Result	Units		RL
Dissolved Silver	<u></u>	<0	.000199	mg/L		0.002
Method Blank (1)	QC Batch: 32921					
QC Batch: 32921		Date Analyzed:	2006-12-18		Analyzed By:	RR TS
Prep Batch: 28533		QC Preparation:	2006-12-13		Prepared By:	12
			MDL			
Parameter	Flag		Result	Units		RL
Dissolved Arsenic			<0.00360	mg/L		0.005
Method Blank (1)	QC Batch: 32921					
QC Batch: 32921		Date Analyzed:	2006-12-18		Analyzed By:	RR
Prep Batch: 28533		QC Preparation:	2006-12-13		Prepared By:	TS
			MDL			
Parameter	Flag		Result	Units		RL
Dissolved Barium		<	<0.000450	mg/L		0.0
Method Blank (1)	QC Batch: 32921					
QC Batch: 32921		Date Analyzed:	2006-12-18		Analyzed By:	
Prep Batch: 28533		QC Preparation:	2006-12-13		Prepared By:	TS
			MDL			
Parameter	Flag		Result	Units		RL
Dissolved Cadmium			< 0.000577	mg/L		0.00
Method Blank (1)	QC Batch: 32921					
QC Batch: 32921		Date Analyzed:	2006-12-18		Analyzed By:	RR
Prep Batch: 28533		QC Preparation:	2006-12-13		Prepared By:	TS

Prep Batch: 28533

Work Order: 6121107

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Prepared By:

TS

HELSTF Groundwater Samples

MDL Parameter Flag Result Units RL Dissolved Chromium < 0.00357 mg/L 0.005 Method Blank (1) QC Batch: 32921 Analyzed By: QC Batch: Date Analyzed: 2006-12-18 RR 32921 Prepared By: TS Prep Batch: 28533 QC Preparation: 2006-12-13 **MDL** Units RLParameter Flag Result 0.0125 < 0.00127 mg/L Dissolved Copper Method Blank (1) QC Batch: 32921 QC Batch: 32921 Date Analyzed: 2006-12-18 Analyzed By: RR Prepared By: TS Prep Batch: QC Preparation: 2006-12-13 28533 MDL Parameter Flag Result Units RL < 0.00398 0.005 Dissolved Lead mg/L QC Batch: 32921 Method Blank (1) Analyzed By: RR OC Batch: 32921 Date Analyzed: 2006-12-18 Prepared By: TS Prep Batch: 28533 QC Preparation: 2006-12-13 **MDL** Parameter Flag Result Units RL< 0.00556 mg/L 0.01 Dissolved Selenium Method Blank (1) QC Batch: 32921 Analyzed By: RR QC Batch: 32921 Date Analyzed: 2006-12-18 Prep Batch: 28533 QC Preparation: 2006-12-13 Prepared By: TS MDL Result Units RL Parameter Flag Dissolved Zinc < 0.00300 mg/L 0.005 Method Blank (1) QC Batch: 32942 QC Batch: 32942 Date Analyzed: 2006-12-19 Analyzed By: RR

QC Preparation:

2006-12-13

7

Work Order: 6121107 HELSTF Groundwater Samples Page Number: 17 of 43

MDL Units RLParameter Flag Result 0.5 < 0.0309 mg/L Dissolved Sodium Method Blank (1) QC Batch: 33039 Analyzed By: 2006-12-08 JR QC Batch: 33039 Date Analyzed: Prepared By: JR QC Preparation: 2006-12-08 Prep Batch: 28716 **MDL** Result Units RLParameter Flag 0.2 < 0.0217 mg/L Bromide Method Blank (1) QC Batch: 33039 Analyzed By: JR 2006-12-08 QC Batch: 33039 Date Analyzed: QC Preparation: JR Prep Batch: 28716 2006-12-08 Prepared By: **MDL** Units RL Result Parameter Flag 0.1 Nitrite-N < 0.0168 mg/L Method Blank (1) QC Batch: 33039 2006-12-08 Analyzed By: JR Date Analyzed: QC Batch: 33039 2006-12-08 Prepared By: JR Prep Batch: QC Preparation: 28716 **MDL** Result Units RL Parameter Flag 0.1 Nitrate-N < 0.0168 mg/L Method Blank (1) QC Batch: 33039 JR Date Analyzed: 2006-12-08 Analyzed By: OC Batch: 33039 Prepared By: JR Prep Batch: 28716 QC Preparation: 2006-12-08 MDL Result Units RL Parameter Flag < 0.0257 mg/L 2 Chloride 0.2 < 0.0168 mg/L Fluoride < 0.0598 mg/L 1 Sulfate Duplicates (1) Analyzed By: DR Date Analyzed: 2006-12-08 QC Batch: 32699 Prepared By: Prep Batch: 28448 QC Preparation: 2006-12-08 DR

Work Order: 6121107

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7		HELSTF Groun	ndwater Samples			
Param	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance	13700	13700	μMHOS/cm	l	0	6.7
Duplicates (1)						
QC Batch: 32873	Da	nte Analyzed:	2006-12-13		Analyzed By:	
Prep Batch: 28588	Qe	C Preparation:	2006-12-13		Prepared By:	DR
	Duplicate	Sample	2			RPD
Param	Result	Result		Dilution	RPD	Limit
Total Dissolved Solids	14100	14500	mg/L	1	3	20
Duplicates (1)						
QC Batch: 32902	Da	ate Analyzed:	2006-12-08		Analyzed By:	DR
Prep Batch: 28610		C Preparation:	2006-12-08		Prepared By:	DR
	Duplicate S	Sample				RPD
Param		Result	Units	Dilution	RPD	Limit
рН	7.48	7.50	s.u.	1	0	20
Laboratory Control Spil	ke (LCS-1)					
QC Batch: 32703	D	ate Analyzed:	2006-12-11		Analyzed By:	
Prep Batch: 28457	Q	C Preparation:	2006-12-11		Prepared By:	SM

^	-	•					
	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit

mg/L

5.00

< 0.820

99

66 - 122

4.93 Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Ammonia-N	4.82	mg/L	1	5.00	< 0.820	96	66 - 122	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

Ammonia-N

2006-12-12 Analyzed By: RR QC Batch: 32745 Date Analyzed: Prep Batch: 28447 QC Preparation: 2006-12-11 Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Copper	0.126	mg/L	1	0.125	< 0.00127	101	83.4 - 117

Work Order: 6121107 **HELSTF** Groundwater Samples

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Copper	0.124	mg/L	1	0.125	< 0.00127	99	83.4 - 117	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32745 Prep Batch: 28447 Date Analyzed: 2006-12-12 Analyzed By: Prepared By:

RR

TS

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QC Preparation: 2006-12-11

LCS Spike Matrix Rec. Param Result Units Dil. Result Amount Rec. Limit **Total Phosphorous** 0.479 mg/L 0.500 < 0.0229 96 87.3 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Phosphorous	0.453	mg/L	1	0.500	< 0.0229	91	87.3 - 114	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32745

Date Analyzed:

2006-12-12

Analyzed By: RR

Prep Batch: 28447 QC Preparation: 2006-12-11 Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Zinc	0.247	mg/L	1	0.250	< 0.000666	99	82.9 - 109

Percent recovery is based on the spike result, RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Zinc	0.243	mg/L	1	0.250	< 0.000666	97	82.9 - 109	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32745 Prep Batch: 28447 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-11

Analyzed By: RR Prepared By: TS

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. Total Silver 0.125 mg/L 1 0.125 < 0.000274 100 87.9 - 111 Total Arsenic 0.491mg/L 0.500 1 < 0.00489 98 86.8 - 108 Total Barium 1.01 mg/L 1 1.00 < 0.000450 101 88.8 - 110 Total Cadmium 0.250 mg/L 1 0.250 < 0.000268 100 86.8 - 110 Total Chromium 0.112 mg/L J 0.100 < 0.00357 112 86.5 - 115 Total Lead 0.486 mg/L 1 0.500 < 0.00310 97 83 - 109 Total Selenium 0.464 mg/L 1 0.500 < 0.00556 93 75 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Silver	0.123	mg/L	1	0.125	< 0.000274	98	87.9 - 111	2	20
Total Arsenic	0.482	mg/L	1	0.500	< 0.00489	96	86.8 - 108	2	20
Total Barium	1.01	mg/L	1	1.00	< 0.000450	101	88.8 - 110	0	20
Total Cadmium	0.249	mg/L	l	0.250	< 0.000268	100	86.8 - 110	0	20
Total Chromium	0.110	mg/L	1	0.100	< 0.00357	110	86.5 - 115	2	20
Total Lead	0.476	mg/L	l	0.500	< 0.00310	95	83 - 109	2	20
Total Selenium	0.413	mg/L	1	0.500	< 0.00556	83	75 - 112	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32815 Prep Batch: 28548 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-12

Analyzed By: JG Prepared By: JG

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	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
1,1-Dichloroethene	50.5	μg/L	1	50.0	< 0.0736	101	83.4 - 114
Benzene	51.9	μ g/L	1	50.0	< 0.0495	104	83.5 - 115
Trichloroethene (TCE)	51.7	μ g/L	1	50.0	< 0.0495	103	91.3 - 111
Toluene	46.9	$\mu \mathrm{g/L}$	1	50.0	< 0.0736	94	82 - 110
Chlorobenzene	49.0	μ g/L	1	50.0	< 0.0217	98	87.9 - 109

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
1,1-Dichloroethene	49.9	μg/L	1	50.0	< 0.0736	100	83.4 - 114	1	20
Benzene	51.6	μ g/L	1	50.0	< 0.0495	103	83.5 - 115	1	20
Trichloroethene (TCE)	51.6	μ g/L	1	50.0	< 0.0495	103	91.3 - 111	0	20
Toluene	47.1	μ g/L	1	50.0	< 0.0736	94	82 - 110	0	20
Chlorobenzene	49.3	μ g/L	1	50.0	< 0.0217	99	87.9 - 109	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

•	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Dibromofluoromethane	50.0	49.4	μg/L	}	50.0	100	99	82.4 - 115
Toluene-d8	49.6	49.8	$\mu \mathrm{g}/\mathrm{L}$	1	50.0	99	100	89.7 - 108
4-Bromofluorobenzene (4-BFB)	49.8	49.1	$\mu \mathrm{g}/\mathrm{L}$	ł	50.0	100	98	84.6 - 114

Laboratory Control Spike (LCS-1)

QC Batch: 32825 Prep Batch: 28447 Date Analyzed: 2006-12-14 QC Preparation: 2006-12-11

Analyzed By: RR Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Sodium	58.7	mg/L	1	50.0	< 0.0309	117	87.1 - 120

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	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Sodium	56.8	mg/L	1	50.0	< 0.0309	114	87.1 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32862 Prep Batch: 28579 Date Analyzed: 2006-12-15 QC Preparation: 2006-12-15 Analyzed By: TS Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Mercury	0.000950	mg/L	1	0.00100	< 0.0000217	95	89.4 - 108

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Mercury	0.000960	mg/L	1	0.00100	< 0.0000217	96	89.4 - 108	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 28580

32864

Date Analyzed:

2006-12-15 QC Preparation: 2006-12-15 Analyzed By:

TS Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Mercury	0.000970	mg/L	1	0.00100	< 0.0000329	97	85 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Mercury	0.000970	mg/L	1	0.00100	< 0.0000329	97	85 - 114	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13

Analyzed By: RR

Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Silver	0.133	mg/L	1	0.125	< 0.000199	106	86.2 - 116

Percent recovery is based on the spike result, RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Silver	0.129	mg/L	1	0.125	< 0.000199	103	86.2 - 116	3	20

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Laboratory Control Spike (LCS-1)

OC Batch: Prep Batch: 28533

32921

Date Analyzed: QC Preparation:

2006-12-18 2006-12-13 Analyzed By: RR

Prepared By: TS

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit < 0.00360 78.7 - 116 Dissolved Arsenic 0.505 mg/L 0.500 101

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Arsenic	0.535	mg/L	1	0.500	< 0.00360	107	78.7 - 116	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32921 Date Analyzed:

2006-12-18

Analyzed By: RR

Prep Batch:

28533

QC Preparation: 2006-12-13

Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Barium	0.947	mg/L	1	1.00	< 0.000450	95	85 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Barium	0.979	mg/L	1	1.00	< 0.000450	98	85 - 114	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch:

32921

Date Analyzed:

2006-12-18

Analyzed By: RR TS

Prep Batch: 28533

QC Preparation: 2006-12-13

Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Cadmium	0.237	mg/L	1	0.250	< 0.000577	95	83.3 - 113

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Cadmium	0.244	mg/L	j	0.250	< 0.000577	98	83.3 - 113	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32921 Prep Batch: 28533 Date Analyzed: QC Preparation: 2006-12-13

2006-12-18

Analyzed By: RR Prepared By: TS

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Chromium	0.0980	mg/L	1	0.100	< 0.00357	98	83 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Chromium	0.0980	mg/L	1	0.100	< 0.00357	98	83 - 112	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13

Analyzed By: RR Prepared By: TS

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LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit < 0.00127 Dissolved Copper 0.121 mg/L 0.125 97 84.3 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Copper	0.125	mg/L	1	0.125	< 0.00127	100	84.3 - 114	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32921 Prep Batch: 28533

Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13 Analyzed By: RR Prepared By: TS

LCS Matrix Spike Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Lead 0.512 0.500 < 0.00398 102 81.1 - 111 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Lead	0.518	mg/L	1	0.500	< 0.00398	104	81.1 - 111	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: Prep Batch:

32921 28533 Date Analyzed: QC Preparation:

2006-12-18 2006-12-13 Analyzed By: RR TS Prepared By:

LCS Spike Matrix Rec. Param Result Units Dil. Result Limit Amount Rec. Dissolved Selenium 0.419 0.500 < 0.00556 84 69.6 - 111 mg/L

7

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Selenium	0.461	mg/L	1	0.500	< 0.00556	92	69.6 - 111	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13

Analyzed By: RR Prepared By: TS

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LCS Spike Matrix Rec. Param Result Dil. Amount Result Rec. Limit Units < 0.00300 Dissolved Zinc 0.222 0.250 89 84.7 - 113 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Zinc	0.226	mg/L	l	0.250	< 0.00300	90	84.7 - 113	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

32942

Date Analyzed:

2006-12-19

Analyzed By: Prepared By:

RR TS

Prep Batch: 28533

QC Preparation: 2006-12-13

LCS Matrix Rec. Spike Param Result Units Dil. Amount Result Rec. Limit Dissolved Sodium 45.1 50.0 < 0.0309 90 85 - 115 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Sodium	49.0	mg/L	1	50.0	< 0.0309	98	85 - 115	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

33039

Date Analyzed:

2006-12-08

Prepared By:

Analyzed By: JR JR

Prep Batch: 28716

QC Preparation:

2006-12-08

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Bromide	2.47	mg/L	i	2.50	< 0.0217	99	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Bromide	2.49	mg/L]	2.50	< 0.0217	100	90 - 110	1	20

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 28716

33039

Date Analyzed: OC Preparation:

2006-12-08 2006-12-08 Analyzed By:

JR Prepared By: JR

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•	1	

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrite-N	2.52	mg/L	1	2.50	< 0.0168	101	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrite-N	2.52	mg/L	1	2.50	< 0.0168	101	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

33039

Date Analyzed:

2006-12-08

Analyzed By: JR

Prep Batch: 28716

QC Preparation:

2006-12-08

Prepared By: JR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrate-N	2.50	mg/L	1	2.50	< 0.0168	100	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrate-N	2.50	mg/L	1	2.50	< 0.0168	100	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

OC Batch:

Param

Chloride

Fluoride

Sulfate

33039

Date Analyzed:

Units

mg/L

mg/L

mg/L

2006-12-08

Spike

Amount

12.5

2.50

12.5

Matrix

Result

< 0.0598

Analyzed By: JR Prepared By:

JR

90 - 110

Prep Batch: 28716

QC Preparation: 2006-12-08

Dil.

1

1

1

Rec. Rec. Limit 97 90 - 110 < 0.0257< 0.0168 100 88.6 - 107

101

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

LCS

Result

12.1

2.49

12.6

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	12.1	mg/L	1	12.5	< 0.0257	97	90 - 110	0	20
Fluoride	2.49	mg/L	1	2.50	< 0.0168	100	88.6 - 107	0	20
Sulfate	12.5	mg/L	1	12.5	< 0.0598	100	90 - 110	1	20

Work Order: 6121107 **HELSTF** Groundwater Samples

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Matrix Spike (MS-1)

Spiked Sample: 111247

OC Batch: 32703 Date Analyzed:

2006-12-11

Analyzed By: SM SM

Prep Batch: 28457

QC Preparation: 2006-12-11

Prepared By:

MS Spike Matrix Rec. Param Result Dil. Result Limit Units Amount Rec. 5.00 < 0.820 95 58 - 134 Ammonia-N 4.76 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Ammonia-N	4.87	mg/L	1	5.00	< 0.820	97	58 - 134	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Spiked Sample: 111245 Matrix Spike (MS-1)

QC Batch: 32745

Prep Batch:

28447

Date Analyzed: QC Preparation:

2006-12-12

2006-12-11

Analyzed By: RR

Prepared By: TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit < 0.00127 Total Copper 0.114 0.125 83.8 - 118 mg/L 91

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Copper	0.115	mg/L	l	0.125	< 0.00127	92	83.8 - 118	Ì	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

OC Batch:

32745

Date Analyzed:

2006-12-12

2006-12-12

Analyzed By:

RR TS

Prep Batch: 28447

QC Preparation: 2006-12-11 Prepared By:

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Phosphorous	0.422	mg/L	1	0.500	< 0.0229	84	70.1 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Phosphorous	0.401	mg/L	l	0.500	< 0.0229	80	70.1 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

OC Batch: 32745 Prep Batch: 28447

Date Analyzed:

QC Preparation: 2006-12-11 Analyzed By: RR

Prepared By: TS

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	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Zinc	0.216	mg/L	1	0.250	< 0.000666	86	75.5 - 113

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Zinc	0.224	mg/L	1	0.250	< 0.000666	90	75.5 - 113	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

QC Batch: 32745 Prep Batch: 28447 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-11

Analyzed By: RR Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Total Silver	0.115	mg/L	1	0.125	< 0.000274	92	88.2 - 114
Total Arsenic	0.428	mg/L	1	0.500	< 0.00489	86	75.9 - 116
Total Barium	0.859	mg/L	ì	1.00	0.005	85	64.9 - 129
Total Cadmium	0.185	mg/L	l	0.250	< 0.000268	74	66.5 - 121
Total Chromium	0.0840	mg/L	1	0.100	< 0.00357	84	69.2 - 129
Total Lead	0.441	mg/L	l	0.500	< 0.00310	88	71.9 - 115
Total Selenium	0.461	mg/L	1	0.500	< 0.00556	92	66.8 - 116

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Silver	0.116	mg/L	1	0.125	< 0.000274	93	88.2 - 114	1	20
Total Arsenic	0.442	mg/L	1	0.500	< 0.00489	88	75.9 - 116	3	20
Total Barium	0.878	mg/L	1	1.00	0.005	87	64.9 - 129	2	20
Total Cadmium	0.203	mg/L	1	0.250	< 0.000268	81	66.5 - 121	9	20
Total Chromium	0.0860	mg/L	1	0.100	< 0.00357	86	69.2 - 129	2	20
Total Lead	0.449	mg/L	1	0.500	< 0.00310	90	71.9 - 115	2	20
Total Selenium	0.479	mg/L	1	0.500	< 0.00556	96	66.8 - 116	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

QC Batch: 32815 Prep Batch: 28548 Date Analyzed: 2006-12-12 QC Preparation: 2006-12-12 Analyzed By: JG Prepared By: JG

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
1,1-Dichloroethene	51.3	μg/L	1	50.0	< 0.0736	103	78.7 - 119
Benzene	53.1	μ g/L	1	50.0	< 0.0495	106	75.8 - 125
Trichloroethene (TCE)	52.5	$\mu \mathrm{g/L}$	1	50.0	< 0.0495	105	83.6 - 112
Toluene	47.9	$\mu \mathrm{g}/\mathrm{L}$	1	50.0	< 0.0736	96	81.6 - 115
Chlorobenzene	50.2	$\mu \mathrm{g}/\mathrm{L}$	i	50.0	< 0.0217	100	83.9 - 113

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Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
1,1-Dichloroethene	52.0	μg/L	ì	50.0	< 0.0736	104	78.7 - 119	1	20
Benzene	53.8	μ g/L	1	50.0	< 0.0495	108	75.8 - 125	1	20
Trichloroethene (TCE)	53.8	$\mu \mathrm{g/L}$	1	50.0	< 0.0495	108	83.6 - 112	2	20
Toluene	48.6	$\mu \mathrm{g}/\mathrm{L}$	1	50.0	< 0.0736	97	81.6 - 115	l	20
Chlorobenzene	50.9	μg/L	1	50.0	< 0.0217	102	83.9 - 113	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Dibromofluoromethane	49.9	50.6	μg/L	1	50	100	101	86.6 - 114
Toluene-d8	50.0	49.6	$\mu \mathrm{g}/\mathrm{L}$	1	50	100	99	91 - 109
4-Bromofluorobenzene (4-BFB)	49.3	49.2	$\mu \mathrm{g}/\mathrm{L}$	1	50	99	98	87.2 - 113

Matrix Spike (MS-1) Spiked Sample: 111245

QC Batch: 32825 Prep Batch: 28447 Date Analyzed: 2006-12-14 QC Preparation: 2006-12-11 Analyzed By: RR Prepared By: TS

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MS Spike Matrix Rec. Param Result Units Amount Result Dil. Rec. Limit Total Sodium 2340 mg/L 50.0 2290 100 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Sodium	2340	mg/L	i	50.0	2290	100	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111036

QC Batch: 32862 Prep Batch: 28579 Date Analyzed: 2006-12-15 QC Preparation: 2006-12-15 Analyzed By: TS Prepared By: TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Total Mercury 0.000960 mg/L 0.00100 5e-05 91 49.1 - 137

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Total Mercury	0.000660	mg/L	1	0.00100	5e-05	61	49.1 - 137	37	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

QC Batch: 32864 Prep Batch: 28580 Date Analyzed: 2006-12-15 QC Preparation: 2006-12-15 Analyzed By: TS Prepared By: TS

Param

MS Spike Matrix Rec. Result Units Dil. Amount Result Limit Rec. Dissolved Mercury 0.00104 0.00100 < 0.0000329 104 mg/L 75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Mercury	0.000980	mg/L	l	0.00100	< 0.0000329	98	75 - 125	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

QC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13 Analyzed By: RR Prepared By: TS

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MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Silver < 0.000199 0.119 mg/L 0.125 95 90.1 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Silver	0.118	mg/L	1	0.125	< 0.000199	94	90.1 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

OC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13

Analyzed By: RR Prepared By: TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Arsenic 0.472 0.500 < 0.00360 94 mg/L 75 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Arsenic	0.426	mg/L	1	0.500	< 0.00360	85	75 - 114	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

OC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13

Analyzed By: RR Prepared By: TS

MS Spike Matrix Rec. Param Dil. Result Units Result Limit Amount Rec. 0.897 Dissolved Barium mg/L 1.00 < 0.000450 90 75 - 125

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RR

TS

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Barium	0.881	mg/L	1	1.00	< 0.000450	88	75 - 125	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

OC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13

Analyzed By: Prepared By:

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Limit Rec. Dissolved Cadmium < 0.000577 0.226 mg/L 0.250 90 75 - 112

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Cadmium	0.232	mg/L	1	0.250	< 0.000577	93	75 - 112	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

OC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13

Analyzed By: RR Prepared By: TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Chromium < 0.00357 87 75 - 121 0.0870 mg/L 0.100

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Chromium	0.0860	mg/L	1	0.100	< 0.00357	86	75 - 121	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

QC Batch: 32921 Prep Batch: 28533 Date Analyzed: 2006-12-18 QC Preparation: 2006-12-13

Analyzed By: RRPrepared By: TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit 0.116 0.125 0.006 88 81.5 - 125 Dissolved Copper mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Copper	0.120	mg/L	1	0.125	0.006	91	81.5 - 125	3	20

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Matrix Spike (MS-1) Spiked Sample: 111243

QC Batch: Prep Batch: 28533

32921

Date Analyzed:

QC Preparation:

2006-12-18

2006-12-13

Analyzed By: RR

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Prepared By: TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Lead < 0.00398 95 75 - 111 0.473 mg/L 0.500

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Lead	0.446	mg/L	1	0.500	< 0.00398	89	75 - 111	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

QC Batch:

32921 Prep Batch: 28533

Date Analyzed:

QC Preparation:

2006-12-18 2006-12-13

Analyzed By: RR

Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Selenium	0.407	mg/L	1	0.500	< 0.00556	81	75 - 118

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Selenium	0.426	mg/L	1	0.500	< 0.00556	85	75 - 118	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

OC Batch: Prep Batch: 28533

32921

Date Analyzed:

QC Preparation:

2006-12-18 2006-12-13 Analyzed By:

RR Prepared By: TS

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Dissolved Zinc	0.236	mg/L	1	0.250	< 0.00300	94	80.4 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Zinc	0.238	mg/L	1	0.250	< 0.00300	95	80.4 - 120	ĺ	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111243

QC Batch: 32942 Prep Batch: 28533 Date Analyzed: 2006-12-19 QC Preparation: 2006-12-13 Analyzed By: RRPrepared By: TS

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Dissolved Sodium 10900 50.0 10870 75 - 125 mg/L 60

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Dissolved Sodium	2	10900	mg/L	1	50.0	10870	60	75 - 125	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

OC Batch: 33039 Prep Batch: 28716 Date Analyzed: 2006-12-08 QC Preparation: 2006-12-08

Analyzed By: JR Prepared By: JR

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MS Spike Matrix Rec. Param Result Amount Units Dil. Result Rec. Limit Bromide 1250 mg/L 500 1250 <10.8 100 90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Bromide	1280	mg/L	500	1250	<10.8	102	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

QC Batch: 33039 Prep Batch: 28716 Date Analyzed: 2006-12-08 QC Preparation: 2006-12-08

Analyzed By: JR Prepared By: JR

MS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit Nitrite-N 1280 500 1250 mg/L < 8.40 102 90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrite-N	1270	mg/L	500	1250	< 8.40	102	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

OC Batch: 33039 Prep Batch: 28716 Date Analyzed: 2006-12-08 QC Preparation: 2006-12-08

Analyzed By: JR Prepared By: JR

¹Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

²Matrix spike recovery out of control limits due to matrix interference. Use LCS/LCSD to demonstrate analysis is under control.

Work Order: 6121107

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	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Nitrate-N	1320	mg/L	500	1250	171	92	78.6 - 105

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Nitrate-N	1310	mg/L	500	1250	171	91	78.6 - 105	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 111245

QC Batch: 33039 Prep Batch: 28716 Date Analyzed: 2006-12-08 QC Preparation: 2006-12-08

Analyzed By: JR Prepared By: JR

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MS Matrix Spike Rec. Param Result Units Dil. Amount Result Rec. Limit Chloride 8140 mg/L 500 6250 2240 94 90 - 110 Fluoride 500 100 1250 mg/L 1250 < 8.4089.9 - 104 Sulfate 12600 500 6250 6470 98 90 - 110 mg/L

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	8120	mg/L	500	6250	2240	94	90 - 110	0	20
Fluoride	1250	mg/L	500	1250	< 8.40	100	89.9 - 104	0	20
Sulfate	12500	mg/L	500	6250	6470	96	90 - 110	l	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 32699

Date Analyzed: 2006-12-08

Analyzed By: DR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Conductance		μMHOS/cm	1410	1410	100	96.7 - 108	2006-12-08

Standard (CCV-1)

QC Batch: 32699

Date Analyzed: 2006-12-08

Analyzed By: DR

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
			1100	Logna	rercen	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Specific Conductance		μMHOS/cm	1410	1410	100	96.7 - 108	2006-12-08

Standard (ICV-1)

QC Batch: 32703

Date Analyzed: 2006-12-11

Analyzed By: SM

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			TICLOIT				
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Ammonia-N		mg/L	5.00	4.98	100	85 - 115	2006-12-11
Standard (CCV-1)						
QC Batch: 3270;			Date Analyz	zed: 2006-12-1	1	Ana	lyzed By: SM
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Ammonia-N		mg/L	5.00	4.76	95	85 - 115	2006-12-11
Standard (ICV-1))						
QC Batch: 3274:	5		Date Analy:	zed: 2006-12-1	2	Ana	lyzed By: RR
			ICVs	ICVs	lCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Copper		mg/L	1,00	0.979	98	90 - 110	2006-12-12
Standard (ICV-1) QC Batch: 3274:			Date Analy:	zed: 2006-12-1	2	Ana	lyzed By: RR
			ICVs	ICVs	ICVs	Percent	
D	171	T.T. **	True	Found	Percent	Recovery	Date
Param Total Phosphorous	Flag	Units mg/L	Conc.	Conc.	Recovery	Limits	
			5 00	4 90	Recovery 98		Analyzed 2006-12-12
Standard (ICV-1)	ı	mgri	5.00	4.90	98	90 - 110	Analyzed 2006-12-12
, ,		mgr	Date Analy:		98	90 - 110	
, ,		mg .			98	90 - 110 Ana	2006-12-12
, ,		mg v	Date Analy:	zed: 2006-12-1	98	90 - 110	2006-12-12
QC Batch: 3274.		Units	Date Analy:	zed: 2006-12-1 ICVs	98 12 ICVs	90 - 110 Ana Percent	2006-12-12 lyzed By: RR
QC Batch: 3274.	5		Date Analy: ICVs True	zed: 2006~12-1 ICVs Found	98 12 ICVs Percent	90 - 110 Ana Percent Recovery	2006-12-12 lyzed By: RR Date Analyzed
QC Batch: 3274. Param Total Zinc	5 Flag	Units	Date Analys ICVs True Conc.	zed: 2006-12-1 ICVs Found Conc.	98 ICVs Percent Recovery	90 - 110 Ana Percent Recovery Limits	2006-12-12 lyzed By: RR Date
Param Total Zinc Standard (ICV-1) Param Total Zinc Standard (ICV-1) QC Batch: 3274:	Flag	Units	Date Analys ICVs True Conc.	zed: 2006-12-1 ICVs Found Conc. 1.04	98 ICVs Percent Recovery 104	90 - 110 Ana Percent Recovery Limits 90 - 110	2006-12-12 lyzed By: RR Date Analyzed
QC Batch: 3274. Param Total Zinc Standard (ICV-1)	Flag	Units	Date Analys ICVs True Conc. 1.00	zed: 2006-12-1 ICVs Found Conc. 1.04	98 ICVs Percent Recovery 104	90 - 110 Ana Percent Recovery Limits 90 - 110	2006-12-12 Elyzed By: RR Date Analyzed 2006-12-12
QC Batch: 3274. Param Total Zinc Standard (ICV-1)	Flag) 5	Units mg/L	Date Analys ICVs True Conc. 1.00 Date Analys ICVs True	zed: 2006-12-1 ICVs Found Conc. 1.04 zed: 2006-12-1 ICVs Found	98 ICVs Percent Recovery 104 ICVs Percent	90 - 110 Ana Percent Recovery Limits 90 - 110 Ana Percent Recovery	2006-12-12 Elyzed By: RR Date Analyzed 2006-12-12
QC Batch: 3274. Param Total Zinc Standard (ICV-1) QC Batch: 3274.	Flag	Units mg/L Units	Date Analys ICVs True Conc. 1.00 Date Analys ICVs True Conc.	zed: 2006-12-1 ICVs Found Conc. 1.04 zed: 2006-12-1 ICVs Found Conc.	98 ICVs Percent Recovery 104 ICVs Percent Recovery	90 - 110 Ana Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits	2006-12-12 llyzed By: RR Date Analyzed 2006-12-12 llyzed By: RR Date Analyzed
Param Total Zinc Standard (ICV-1) QC Batch: 3274. Param Total Silver	Flag) 5	Units mg/L Units mg/L	Date Analyst ICVs True Conc. 1.00 Date Analyst ICVs True Conc. 0.125	zed: 2006-12-1 ICVs Found Conc. 1.04 zed: 2006-12-1 ICVs Found Conc. 0.126	12 ICVs Percent Recovery 104 ICVs Percent Recovery 101	90 - 110 Ana Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits 90 - 110	2006-12-12 llyzed By: RR Date Analyzed 2006-12-12 llyzed By: RR Date Analyzed 2006-12-12
QC Batch: 3274. Param Total Zinc Standard (ICV-1)	Flag) 5	Units mg/L Units	Date Analys ICVs True Conc. 1.00 Date Analys ICVs True Conc.	zed: 2006-12-1 ICVs Found Conc. 1.04 zed: 2006-12-1 ICVs Found Conc.	98 ICVs Percent Recovery 104 ICVs Percent Recovery	90 - 110 Ana Percent Recovery Limits 90 - 110 Ana Percent Recovery Limits	2006-12-12 llyzed By: RR Date Analyzed 2006-12-12 llyzed By: RR

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standard	continued	
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Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Cadmium		mg/L	1.00	0.991	99	90 - 110	2006-12-12
Total Chromium		mg/L	1.00	0.995	100	90 - 110	2006-12-12
Total Lead		mg/L	1.00	0.997	100	90 - 110	2006-12-12
Total Selenium		mg/L	1.00	1.02	102	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Copper		mg/L	1.00	0.978	98	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Phosphorous		mg/L	5.00	4.91	98	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Zinc		mg/L	1.00	1.04	104	90 - 110	2006-12-12

Standard (CCV-1)

QC Batch: 32745

Date Analyzed: 2006-12-12

Analyzed By: RR

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Silver		mg/L	0.125	0.127	102	90 - 110	2006-12-12
Total Arsenic		mg/L	1.00	0.987	99	90 - 110	2006-12-12
Total Barium		mg/L	1.00	1.01	101	90 - 110	2006-12-12
Total Cadmium		mg/L	1.00	0.988	99	90 - 110	2006-12-12
Total Chromium		mg/L	1.00	0.990	99	90 - 110	2006-12-12
Total Lead		mg/L	1.00	0.993	99	90 - 110	2006-12-12
Total Selenium		mg/L	1.00	1.02	102	90 - 110	2006-12-12

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Standard (CCV-1)

QC Batch: 32815

Date Analyzed: 2006-12-12

Analyzed By: JG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Vinyl Chloride		μg/L	50.0	54.5	109	80 - 120	2006-12-12
1,1-Dichloroethene		μ g/L	50.0	52.7	105	80 - 120	2006-12-12
Chloroform		$\mu \mathrm{g/L}$	50.0	51.1	102	80 - 120	2006-12-12
1,2-Dichloropropane		$\mu \mathrm{g/L}$	50.0	52.1	104	80 - 120	2006-12-12
Toluene		μg/L	50.0	49.4	99	80 - 120	2006-12-12
Chlorobenzene		μg/L	50.0	51.1	102	80 - 120	2006-12-12
Ethylbenzene		μ g/L	50.0	52.7	105	80 - 120	2006-12-12

Standard (CCV-2)

QC Batch: 32815

Date Analyzed: 2006-12-12

Analyzed By: JG

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Vinyl Chloride		μg/L	50.0	48.1	96	80 - 120	2006-12-12
1,1-Dichloroethene		$\mu \mathrm{g}/\mathrm{L}$	50.0	49.5	99	80 - 120	2006-12-12
Chloroform		μ g/L	50.0	48.0	96	80 - 120	2006-12-12
1,2-Dichloropropane		$\mu \mathrm{g}/\mathrm{L}$	50.0	48.6	97	80 - 120	2006-12-12
Toluene		μ g/L	50.0	46.7	93	80 - 120	2006-12-12
Chlorobenzene		μ g/L	50.0	48.8	98	80 - 120	2006-12-12
Ethylbenzene		μ g/L	50.0	50.2	100	80 - 120	2006-12-12

Standard (ICV-1)

QC Batch: 32825

Date Analyzed: 2006-12-14

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Sodium		mg/L	50.0	51.5	103	90 - 110	2006-12-14

Standard (CCV-1)

QC Batch: 32825

Date Analyzed: 2006-12-14

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Sodium		mg/L	50.0	48.9	98	90 - 110	2006-12-14

Standard (CCV-1)

QC Batch: 32862

Date Analyzed: 2006-12-15

Analyzed By: TS

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			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Mercury		mg/L	0.00100	0.00101	101	80 - 120	2006-12-15
Standard (CCV-2)							
QC Batch: 32862			Date Analyzed:	2006-12-15		Ana	llyzed By: TS
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Total Mercury		mg/L	0.00100	0.00102	102	80 - 120	2006-12-15
Standard (ICV-1)							
QC Batch: 32864			Date Analyzed:	2006-12-15		Ana	alyzed By: TS
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Mercury		mg/L	0.00100	0.00106	106	80 - 120	2006-12-15
Standard (CCV-1) QC Batch: 32864			Date Analyzed:	2006-12-15		Ana	ılyzed By: TS
			•		oou.		y . y
			CCVs	CCVs	CCVs	Percent	Y2 - 4
Param	Floor	Units	True Conc.	Found Conc.	Percent	Recovery	Date
Dissolved Mercury	Flag	mg/L	0.00100	0.00101	Recovery 101	Limits 80 - 120	Analyzed 2006-12-15
Dissolved Meretiny		111g/15	0.00100	0.00101	101	60 - 120	2000-12-13
Standard (ICV-1)							
QC Batch: 32873			Date Analyzed:	2006-12-13		Ana	lyzed By: DR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag		Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids	\$	mg/L	1000	967	97	94.4 - 106	2006-12-13
Standard (CCV-1)							
QC Batch: 32873			Date Analyzed:	2006-12-13		Ana	lyzed By: DR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag		Conc.	Conc.	Recovery	Limits	Analyzed
Total Dissolved Solids	>	mg/L	1000	995	100	94.4 - 106	2006-12-13

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Standard (ICV-1)

QC Batch: 32902

Date Analyzed: 2006-12-08

Analyzed By: DR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pН		s.u.	7.00	6.94	99	98.8 - 101	2006-12-08

Standard (CCV-1)

QC Batch: 32902

Date Analyzed: 2006-12-08

Analyzed By: DR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
pН		s.u.	7.00	6.99	100	98.8 - 101	2006-12-08

Standard (ICV-1)

QC Batch: 32918

Date Analyzed: 2006-12-15

Analyzed By: JG

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 105	2006-12-15
Carbonate Alkalinity		mg/L as CaCo3	0.00	240		0 - 105	2006-12-15
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	10.0		0 - 105	2006-12-15
Total Alkalinity		mg/L as CaCo3	250	250	100	93.7 - 99.9	2006-12-15

Standard (CCV-1)

QC Batch: 32918

Date Analyzed: 2006-12-15

Analyzed By: JG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0.00	<1.00		0 - 105	2006-12-15
Carbonate Alkalinity		mg/L as CaCo3	0.00	228		0 - 105	2006-12-15
Bicarbonate Alkalinity		mg/L as CaCo3	0.00	20.0		0 - 105	2006-12-15
Total Alkalinity		mg/L as CaCo3	250	248	99	93.7 - 99.9	2006-12-15

Standard (ICV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Silver		mg/L	0.125	0.128	102	90 - 110	2006-12-18

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Standard ()	(CV-1)
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QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Arsenic		mg/L	1.00	0.987	99	90 - 110	2006-12-18

Standard (ICV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Barium		mg/L	1.00	0.996	100	90 - 110	2006-12-18

Standard (ICV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Cadmium		mg/L	1.00	0.985	98	95 - 105	2006-12-18

Standard (ICV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Chromium		mg/L	1.00	0.982	98	90 - 110	2006-12-18

Standard (ICV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Copper		mg/L	1.00	0.998	100	90 - 110	2006-12-18

Standard (ICV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

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			1122011 010	and water barry			
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Lead		mg/L	1.00	0.986	99	90 - 110	2006-12-18
Standard (ICV-1)							
QC Batch: 32921			Date Analyzed:	2006-12-18		Ana	lyzed By: RR
			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Selenium		mg/L	1.00	1.06	106	90 - 110	2006-12-18
Standard (ICV-1) QC Batch: 32921			Date Analyzed:	2006-12-18		Ana	lyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Zinc		mg/L	1.00	1.04	104	90 - 110	2006-12-18
Standard (CCV-1) QC Batch: 32921			Date Analyzed:	2006-12-18		Ana	lyzed By: RR
			CCVs	CCVs	CCVs	Percent	
**	Y21	11.2	True	Found	Percent	Recovery	Date
Param Dissolved Silver	Flag	Units	Conc. 0.125	Conc. 0.129	Recovery 103	Limits 90 - 110	Analyzed 2006-12-18
Dissolved Slivel		mg/L	0.123	0.129	103	90 - 110	2000-12-18
Standard (CCV-1)							
QC Batch: 32921			Date Analyzed:	2006-12-18		Ana	lyzed By: RR
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Arsenic	5	mg/L	1.00	1.04	104	90 - 110	2006-12-18
Standard (CCV-1)							
QC Batch: 32921			Date Analyzed:	2006-12-18		Ana	ilyzed By: RR
•			CCVs	CCVs	CCVs	Percent	•
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Barium		mg/L	1.00	1.03	103	90 - 110	2006-12-18

Work Order: 6121107 HELSTF Groundwater Samples Page Number: 41 of 43

Standard (CCV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Cadmium		mg/L	1.00	0.991	99	90 - 110	2006-12-18

Standard (CCV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	73
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Chromium		mg/L	1.00	0.983	98	90 - 110	2006-12-18

Standard (CCV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Copper		mg/L	1.00	1,01	101	90 - 110	2006-12-18

Standard (CCV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Lead		mg/L	1.00	0.983	98	<u> 90 - 110</u>	2006-12-18

Standard (CCV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Selenium		mg/L	1.00	1.02	102	90 - 110	2006-12-18

Standard (CCV-1)

QC Batch: 32921

Date Analyzed: 2006-12-18

Analyzed By: RR

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			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Zinc	Tag	mg/L	1.00	1.05	105	90 - 110	2006-12-18
JISSOIVEG ZIIIC		nig/L	1.00	1.03	103	90 - 110	2000-12-18
Standard (ICV-1)							
QC Batch: 32942			Date Analyz	ed: 2006-12-	19	Ana	lyzed By: RR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Dissolved Sodium		mg/L	50.0	52.5	105	90 - 110	2006-12-19
Standard (CCV-1)							
QC Batch: 32942			Date Analyz	ed: 2006-12-	19	Ana	lyzed By: RR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
	* ****b		50.0		94	90 - 110	2006-12-19
Dissolved Sodium Standard (ICV-1)		mg/L		46.9			
Standard (ICV-1)		шg/L	Date Analyz	zed: 2006-12-			alyzed By: JR
Standard (ICV-1)		mg/L	Date Analyz ICVs	zed: 2006-12- ICVs	08 ICVs	An Percent	alyzed By: JR
Standard (ICV-1) QC Batch: 33039			Date Analyz ICVs True	zed: 2006-12- ICVs Found	.08 ICVs Percent	An Percent Recovery	alyzed By: JR Date
Standard (ICV-1) QC Batch: 33039 Param F		Jnits	Date Analyz ICVs True Conc.	zed: 2006-12- ICVs Found Conc.	.08 ICVs Percent Recovery	An Percent Recovery Limits	alyzed By: JR Date Analyzed
Standard (ICV-1) QC Batch: 33039			Date Analyz ICVs True	zed: 2006-12- ICVs Found	.08 ICVs Percent	An Percent Recovery	alyzed By: JR Date
Standard (ICV-1) QC Batch: 33039 Param F Bromide		Jnits	Date Analyz ICVs True Conc.	zed: 2006-12- ICVs Found Conc.	.08 ICVs Percent Recovery	An Percent Recovery Limits	alyzed By: JR Date Analyzed
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1)		Jnits	Date Analyz ICVs True Cone. 2.50	zed: 2006-12- ICVs Found Conc.	ICVs Percent Recovery 98	An Percent Recovery Limits 93.2 - 98.5	alyzed By: JR Date Analyzed
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1)		Jnits	Date Analyz ICVs True Cone. 2.50	zed: 2006-12- ICVs Found Conc. 2.46	ICVs Percent Recovery 98	An Percent Recovery Limits 93.2 - 98.5	alyzed By: JR Date Analyzed 2006-12-08
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1)		Jnits	Date Analyz ICVs True Conc. 2.50 Date Analyz	zed: 2006-12- ICVs Found Conc. 2.46	ICVs Percent Recovery 98	An Percent Recovery Limits 93.2 - 98.5	alyzed By: JR Date Analyzed 2006-12-08
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1) QC Batch: 33039 Param)	Jnits	Date Analyz ICVs True Conc. 2.50 Date Analyz ICVs True Conc.	red: 2006-12- ICVs Found Conc. 2.46 red: 2006-12- ICVs Found Conc.	ICVs Percent Recovery 98 ICVs Percent Recovery	An Percent Recovery Limits 93.2 - 98.5 An Percent Recovery Limits	Date Analyzed 2006-12-08 alyzed By: JR Date Analyzed
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1) QC Batch: 33039	Flag	Jnits ng/L	Date Analyz ICVs True Conc. 2.50 Date Analyz ICVs True	zed: 2006-12- ICVs Found Conc. 2.46 zed: 2006-12- ICVs Found	ICVs Percent Recovery 98 -08 ICVs Percent	An Percent Recovery Limits 93.2 - 98.5 An Percent Recovery	Date Analyzed 2006-12-08 alyzed By: JR
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1) QC Batch: 33039 Param I Nitrite-N	Flag	Jnits ng/L Units	Date Analyz ICVs True Conc. 2.50 Date Analyz ICVs True Conc.	red: 2006-12- ICVs Found Conc. 2.46 red: 2006-12- ICVs Found Conc.	ICVs Percent Recovery 98 ICVs Percent Recovery	An Percent Recovery Limits 93.2 - 98.5 An Percent Recovery Limits	Date Analyzed 2006-12-08 alyzed By: JR Date Analyzed
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1) QC Batch: 33039 Param I Nitrite-N	Flag	Jnits ng/L Units	Date Analyz ICVs True Conc. 2.50 Date Analyz ICVs True Conc.	zed: 2006-12- ICVs Found Conc. 2.46 zed: 2006-12- ICVs Found Conc. 2.45	ICVs Percent Recovery 98 ICVs Percent Recovery	An Percent Recovery Limits 93.2 - 98.5 An Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-08 alyzed By: JR Date Analyzed
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1) QC Batch: 33039 Param D Nitrite-N Standard (ICV-1)	Flag	Jnits ng/L Units	Date Analyz ICVs True Conc. 2.50 Date Analyz ICVs True Conc. 2.50	red: 2006-12- ICVs Found Conc. 2.46 red: 2006-12- ICVs Found Conc. 2.45	ICVs Percent Recovery 98 ICVs Percent Recovery 98	An Percent Recovery Limits 93.2 - 98.5 An Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-08 alyzed By: JR Date Analyzed 2006-12-08
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1) QC Batch: 33039 Param D Nitrite-N Standard (ICV-1)	Flag	Jnits ng/L Units	Date Analyz ICVs True Conc. 2.50 Date Analyz ICVs True Conc. 2.50 Date Analyz ICVs	red: 2006-12- ICVs Found Conc. 2.46 red: 2006-12- ICVs Found Conc. 2.45	ICVs Percent Recovery 98 OS ICVs Percent Recovery 98	An Percent Recovery Limits 93.2 - 98.5 An Percent Recovery Limits 90 - 110 An	alyzed By: JR Date Analyzed 2006-12-08 alyzed By: JR Date Analyzed 2006-12-08
Standard (ICV-1) QC Batch: 33039 Param F Bromide Standard (ICV-1) QC Batch: 33039 Param I Nitrite-N Standard (ICV-1) QC Batch: 33039	Flag	Jnits ng/L Units	Date Analyz ICVs True Conc. 2.50 Date Analyz ICVs True Conc. 2.50	red: 2006-12- ICVs Found Conc. 2.46 red: 2006-12- ICVs Found Conc. 2.45	ICVs Percent Recovery 98 ICVs Percent Recovery 98	An Percent Recovery Limits 93.2 - 98.5 An Percent Recovery Limits 90 - 110	Date Analyzed 2006-12-08 alyzed By: JR Date Analyzed 2006-12-08

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Standard (ICV-1)

QC Batch: 33039

Date Analyzed: 2006-12-08

Analyzed By: JR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	12.5	11.9	95	90 - 110	2006-12-08
Fluoride		mg/L	2.50	2.47	99	90 - 110	2006-12-08
Sulfate		mg/L	12.5	11.9	95	90 - 110	2006-12-08

Standard (CCV-1)

QC Batch: 33039

Date Analyzed: 2006-12-08

Analyzed By: JR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Bromide	3	mg/L	2.50	2.47	99	93.2 - 98.5	2006-12-08

Standard (CCV-1)

QC Batch: 33039

Date Analyzed: 2006-12-08

Analyzed By: JR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Nitrite-N		mg/L	2.50	2.47	99	90 - 110	2006-12-08

Standard (CCV-1)

QC Batch: 33039

Date Analyzed: 2006-12-08

Analyzed By: JR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Nitrate-N		mg/L	2.50	2.39	96	90 - 110	2006-12-08

Standard (CCV-1)

QC Batch: 33039

Date Analyzed: 2006-12-08

Analyzed By: JR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	12.5	12.0	96	90 - 110	2006-12-08
Fluoride		mg/L	2.50	2.49	100	90 - 110	2006-12-08
Sulfate		mg/L	12.5	12.0	96	90 - 110	2006-12-08

 $^{^3}$ SPECIAL